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ART. XXI.—*The Lithobiomorpha of New Zealand.*

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[Read before the Philosophical Institute of Canterbury, 18th October, 1916; received by Editors, 30th December, 1916; issued separately, 24th August, 1917.]

THIS paper contains an account of various Lithobiomorpha collected from time to time in different parts of New Zealand. Hitherto only six species of the suborder have been known from this country—*Lithobius argus* Newport, *Henicops maculatus* Newport, *H. impressus* Hutton, *Lamyctes emarginatus* (Newport), *Haaseilla insularis* (Haase), and *Anopsobius neozelanicus* Silvestri. In the following pages three new species of *Lamyctes* are added, including one from the Kermadec Islands and another from the Chatham Islands: the genus *Paralamyctes*, hitherto unknown in New Zealand, is represented by two new species: and a new genus, *Wailamyctes*, with two new species, is described from specimens collected in Canterbury and Stewart Island.

KEY TO THE FAMILIES.

1. Sternite of prehensorial segment absent, labrum tridentate, no tibial spurs . . . . . Lithobiidae.
2. Sternite of prehensorial segment well marked, labrum unidentate, tibial spurs present on most of the legs.
  - a. Spiracles on first pedigerous segment . . . . . Henicopidae.
  - a<sup>1</sup>. No spiracles on the first pedigerous segment, coxal pores on the last two segments . . . . . Anopsobiidae.

The family Zygethobiidae (Chamberlain), which is not represented in New Zealand, stands near the Anopsobiidae, from which it differs in having coxal pores on the last four segments.

## Family LITHOBIIDAE.

Genus LITHOBIUS Leach, 1815.

*Lithobius* Leach, *Trans. Linn. Soc.*, vol. 11, p. 381 (1815). Hutton, *Index Faunae Novae Zealandiae*, p. 235 (1904).

Head with numerous ocelli, labrum tridentate. Sternite of prehensorial segment absent. Legs without a tibial spur.

Type: *L. forficatus* Leach.

1. *Lithobius argus* Newport, 1845.

*Lithobius argus* Newport, *Trans. Linn. Soc.*, vol. 19, p. 369 (1845). Hutton, *Index Faunae Novae Zealandiae*, p. 235 (1904).

"Ferrugineus, capite parvo subconvexo, antennis pilosis, ocellis parvis brunneis utrinque 28-30, labio angustato emarginato polito: denticulis 10 nigris. Long. unc. 9/10."—(Newport.)

"Hab. in Nova Zelandia, prope Wellington. (v. in Mus. D. Hope.)"

I have not seen any specimens of this species, or of any other species of the genus. Newport's description is the only account of its occurrence.

## Family HENICOPIIDAE.

## KEY TO THE GENERA.

1. First to 13th legs with tarsi triarticulate, 14th and 15th pairs with tarsi 6-jointed .. .. . *Henicops* Newport.
2. First to 12th legs with tarsi unarticulate, 13th to 15th legs with tarsi biarticulate.
  - a. Prosternum with dental edges rounded and narrow, teeth 1.2 + 2.1 .. .. . *Lamyctes* Meinert.
  - a<sup>1</sup>. Prosternum with dental edges straight and broad, teeth 4 + 4 to 6 + 6 .. .. . *Wailamyctes* nov.
3. All the legs with tarsi biarticulate .. .. . *Paralamyctes* Pocock.
4. Coxal pores reduced to one on each side; 15th pair of legs much shorter than 14th and without protarsal segment .. .. . *Hauseilla* Pocock.

## Genus HENICOPS Newport, 1845.

*Henicops* Newport, *Trans. Linn. Soc.*, vol. 19, p. 372 (1845). Hutton, *Ann. Mag. Nat. Hist.*, 4th ser., vol. 20, p. 114 (1877); id., *Trans. N.Z. Inst.*, vol. 10, p. 288 (1878). Pocock, *Ann. Mag. Nat. Hist.*, 7th ser., vol. 8, p. 453 (1901). Hutton, *Index Faunae Novae Zealandiae*, p. 235 (1904).

Head with one pair of eyes. Antennae with from 30 to 37 joints. Tergites (fig. 1) in the anterior region with posterior angles rounded, and slightly emarginate, becoming increasingly emarginate, and with the angles less rounded posteriorly. Mandibles (figs. 2 and 2a) with complex teeth, a set of pectinate processes above the teeth and a fringe of fine hairs below them. Labrum (fig. 3) unidentate, inner edges of lateral pieces fringed with small hairs. First pair of maxillae (figs. 4 and 4a): inner rami separated to a considerable extent, provided with plumose and simple hairs; outer rami with plumose hairs along the inner edge, and simple hairs elsewhere. Prosternum narrowed anteriorly, teeth distinct. Stigmata on the 1st, 3rd,

5th, 8th, 10th, 12th, and 14th segments. Legs of the 1st to 13th pairs with tarsi biarticulate: of the 14th and 15th pairs with protarsus divided into 2 segments and tarsus into 4. Tibial spur on legs 1 to 14.

Type: *H. maculatus* Newport.

Chamberlain (*Bull. Mus. Comp. Zool. Harvard*, vol. 57, No. 1, p. 4, 1912) has given the absence of plumose hairs on the inner ramus of the first pair of maxillae as one of the characters distinguishing the Henicopidae from

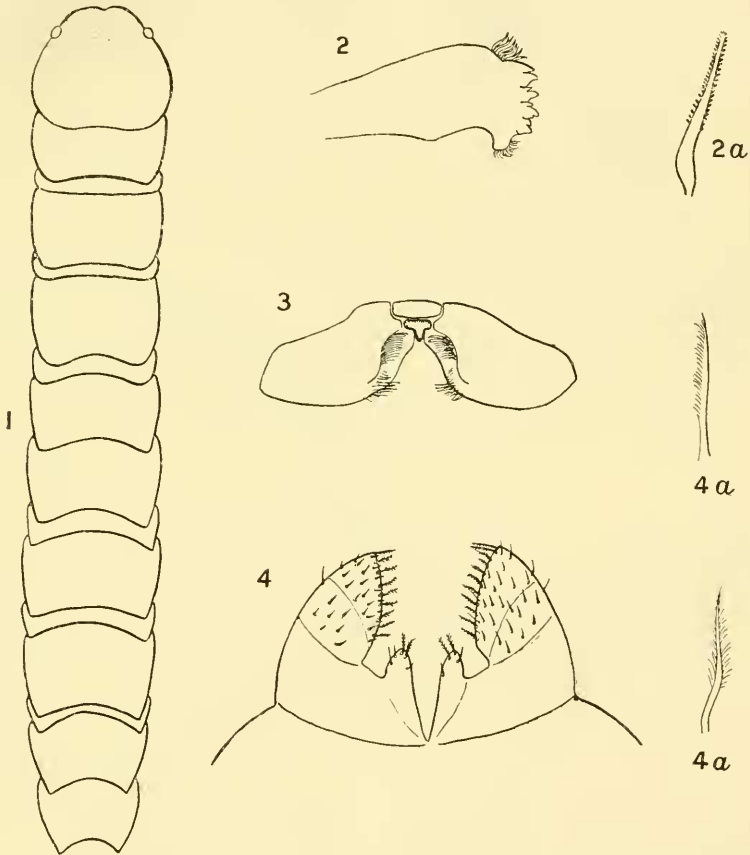


FIG. 1.—Dorsal view of body.

FIG. 2.—Mandible.

FIG. 2a.—Pectinate process of mandible.

FIG. 3.—Labrum.

FIG. 4.—First pair of maxillae.

FIG. 4a.—Hairs on outer rami.

the Lithobiidae. In all the specimens which I have examined of *H. maculatus* there are two or three plumose hairs as well as simple hairs on the inner ramus. The presence of these plumose hairs may perhaps be used to distinguish *Henicops* from the other genera of the family.

1. *Henicops maculata* Newport, 1845. (Figs. 1 to 5.)

*Henicops maculata* Newport, *Trans. Linn. Soc.*, vol. 19, p. 372, pl. 33, fig. 37; pl. 40, fig. 3 (1845); id., *Cat. Myr. Brit. Mus.*, p. 22. Haase, *Die indisch-austral. Chilopoden. Abhand. Dresden Mus.*, No. 5, p. 36 (1887). Pocock, *Ann. Mag. Nat. Hist.*, 6th ser., vol. 8, p. 154 (1891); id., 6th ser., vol. 11, p. 125 (1893); id., 7th ser., vol. 8, p. 453 (1901). Hutton, *Index Faunae Novae Zealandiae*, p. 235 (1904).

Colour (in spirit) above yellowish-brown, each tergum with an irregular broad dark edging and a median broad dark band. The general appearance of the dorsal surface is thus a light groundwork with three longitudinal dark bands. The head is also dark around the margin.

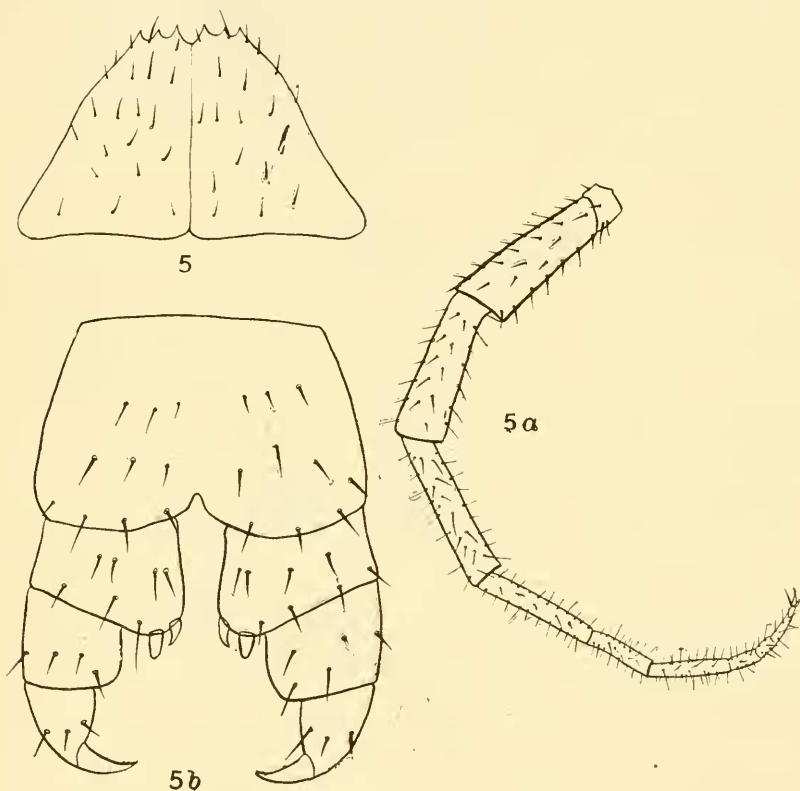


FIG. 5.—Prosternum.

FIG. 5a.—15th leg.

FIG. 5b.—Gonopods of ♀.

Antennae: the joints range in number from 30 to 37, varying evenly around 34. Prosternum (fig. 5) with praecoxal processes rounded anteriorly, teeth uniformly 3 + 3. Tergites anteriorly with rounded angles and with the posterior borders slightly emarginate, the emargination and the acuteness of the angles increasing posteriorly. Tibial spur on legs 1 to 14. Legs long and hairy, the tarsi with 2 + 2 spinules beneath, set at the distal ends

of the subsegments; the 15th pair (fig. 5a) much the longest. Coxal pores small, varying in number, usually 4, 5, 5, 5. Gonopods of ♀ (fig. 5b) with the outer basal spur larger and blunt, and the inner slightly curved and sharper; terminal claw curved.

Length 15 mm.

*Loc.*—Mount Algidus, Mount Dick, Ben Lomond, Hollyford River (T. Hall); Wooded Peak, Nelson (F. G. Gibbs); Hawke's Bay (W. W. Smith); Lake Rotoiti, Nelson, and Cass. Canterbury (G. A.).

*Hab.*—Australia and New Zealand.

## 2. *Henicops impressus* Hutton, 1877.

*Henicops impressus* Hutton, *Ann. Mag. Nat. Hist.*, 4th ser., vol. 20, p. 114 (1877); id., *Trans. N.Z. Inst.*, vol. 10, p. 288 (1878). Pocock, *Ann. Mag. Nat. Hist.*, 7th ser., vol. 8, p. 453 (1901). Hutton, *Index Faunae Novae Zealandiae*, p. 235 (1904).

“Head broadly ovate, narrowed towards the front, with an elevated margin behind, and an impressed curved transverse line, convex backward, on the top before the eyes; space between the antennae concave. Dental lamina with eight acute teeth. Antennae tomentose, with 34–36 joints. Segments 15 (without the head), alternately large and small; but the small segment between the 7th and 8th, and between the 14th and 15th, absent; each segment with a raised margin. Above olive-brown, generally more or less marbled with black; legs pale-bluish; feet yellow. Under-surface of head and region of anus reddish. Some scattered hairs on the legs. Length 0.6 in.

“*Hab.*—Dunedin and Queenstown.

“It is astonishing with what rapidity this creature runs.”—(Hutton.)

The type of this species has been lost, and I have not seen any specimens corresponding exactly with the above description. Hutton does not mention any characters at present regarded as critical which would distinguish it from *H. maculatus*, except the number of praecoxal teeth. I take Hutton's “eight acute teeth” to be equivalent to 4 + 4. From the specimens I have examined of *H. maculatus*, it appears to have 3 + 3 teeth uniformly, and so, in the absence of definite information, I do not think it advisable to combine *H. maculatus* and *H. impressus* at present.

## GENUS LAMYCTES Meinert, 1868.

*Lamyctes* Meinert, *Nat. Tidsskr.*, vol. 5, p. 226 (1868). *Henicops* Latzel, *Die Myr. öst-ung. Mon.*, vol. 5, 1, p. 132 (1880). *Lamyctes* Pocock, *Ann. Mag. Nat. Hist.*, 7th ser., vol. 8, p. 449 (1901). Hutton, *Index Faunae Novae Zealandiae*, p. 235 (1904). Chamberlain, *Bull. Mus. Comp. Zool. Harvard*, vol. 57, No. 1, p. 5 (1912).

Labrum unidentate. Inner branch of first pair of maxillae with simple hairs only, outer branch with simple and plumose hairs. One pair of eyes present. Antennae short, with 24 to 31 joints. Prosternum narrowed anteriorly, and with rounded dental edges, teeth commonly 1.2 + 2.1. Dorsal plates with posterior angles rounded, and with only slight posterior emarginations. Spiracles on segments 1, 3, 5, 8, 10, 12, 14. Tarsi of 1st to 12th legs entire, of 13th to 15th legs biarticulate. Tibial spur on legs 1 to 11 or 1 to 12. Coxal pores on the last four pairs of legs.

Type: *L. fulvicornis* Meinert.

## KEY TO NEW ZEALAND SPECIES.

1. Tibial spur on legs 1 to 11.
  - a. Colour dark brown, coxal pores 3, 3, 3 .. 1. *L. emarginatus* (Newp.).
  - b. Colour light brown, coxal pores 2, 2, 2, 2. .. 2. *L. neozelandicus* sp. n.
2. Tibial spur on legs 1 to 12.
  - c. Coxal pores small, 1st tarsal joint of 15th leg 7 times as long as wide .. 3. *L. chathamensis* sp. n.
  - d. Coxal pores large, 1st tarsal joint of 15th leg 9 times as long as wide .. 4. *L. kermadecensis* sp. n.

1. *Lamyctes emarginatus* (Newport), 1844. (Figs. 6 to 9.)

*Lithobius emarginatus* Newport, *Ann. Mag. Nat. Hist.*, vol. 13, p. 96 (1844). *Henicops emarginatus* Newport, *Trans. Linn. Soc.*, vol. 19, p. 372 (1845). Pocock, *Ann. Mag. Nat. Hist.*, 6th ser., vol. 8, p. 154 (1891). *Lamyctes emarginatus* Pocock, *Ann. Mag. Nat. Hist.*, 7th ser., vol. 8, p. 450 (1901). Hutton, *Index Faunae Novae Zealandiae*, p. 235, (1904).

Colour dark purple-brown, in spirit reddish-brown.

Antennae 25 joints, varying. Prosternum (fig. 6) 1.5 times as wide as long; teeth 1.2 + 2.1, the outer tooth very small. Coxal pores 3, 3, 3, 3.

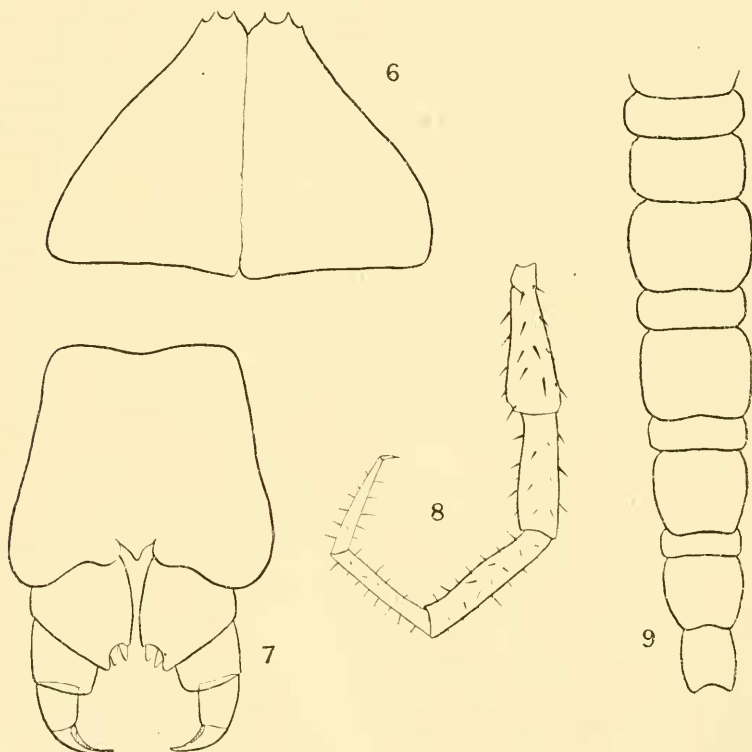


FIG. 6.—Prosternum.  
FIG. 7.—Gonopods of ♀.

FIG. 8.—15th leg.  
FIG. 9.—Posterior tergites.

Gonopods of ♀ (fig. 7) with moderately sharp basal spurs and curved sharp terminal claw. First tarsal joint of 15th leg (fig. 8) 6.6 times longer



than wide; femur 1.6 times as wide as tibia. Tibial spur on legs 1 to 11. Tergites (fig. 9) with anterior and posterior angles all rounded; a slight posterior emargination is evident on the 8th tergite, increasing in depth in posterior segments.

Length 9 mm.

*Loc.*—Riccarton, Christchurch (G. A.).

*Note.*—I have identified the specimens included under this name on the colour alone. The type specimen appears to have been lost, and the character used by Newport to define the species—*i.e.*, the dentition of the prosternum—is common to many species of the genus, if, indeed, it be not a generic character. Newport examined a preserved specimen when he described *L. emarginatus*, and the specimens here included under this name were the only preserved ones in my collection which retained the ferruginous colour. The determination is as unsatisfactory as can be, and can only be regarded as a compromise until the type is found or the matter is otherwise settled.

2. *Lamyctes neozelanicus* sp. n. (Figs. 10 to 12.)

Colour light brown, in spirit yellowish-brown.

Antennae 25 joints. Prosternum (fig. 10) 1.73 times as wide as long; teeth 1.2 + 2.1, arranged as in the preceding species. Coxal pores 2, 2, 2, 2. Gonopods of ♀ (fig. 11) with straight blunt basal spurs, and curved

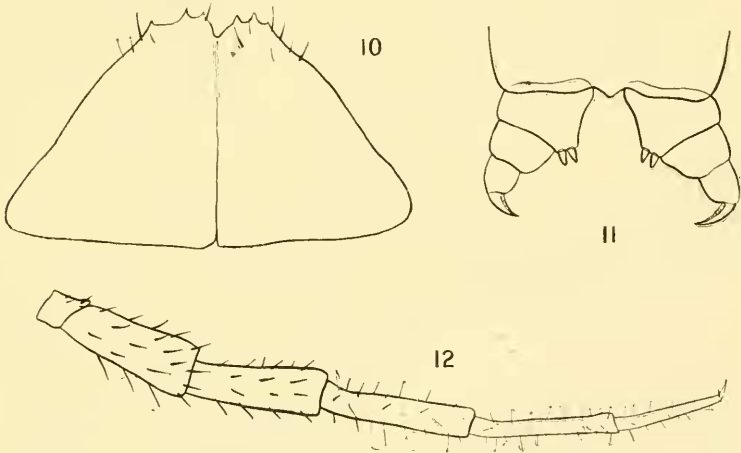


FIG. 10.—Prosternum.

FIG. 11.—Gonopods of ♀.

FIG. 12.—15th leg.

sharp terminal claw. First tarsal joint of 15th leg (fig. 12) 8 times longer than wide; femur 1.8 times as wide as tibia. Tibial spur on legs 1 to 11. Tergites as in *L. emarginatus*.

Length 9 mm.

*Loc.*—Waipara, Canterbury (G. Brittin).

3. *Lamyctes chathamensis* sp. n. (Figs. 13 to 15.)

Colour (in spirit) light brown, the antennae a darker reddish-brown.

Antennae 27 joints. Prosternum (fig. 13) 1.7 times as wide as long, well supplied with hairs; teeth 1.2 + 2.1, the outer tooth exceedingly small.

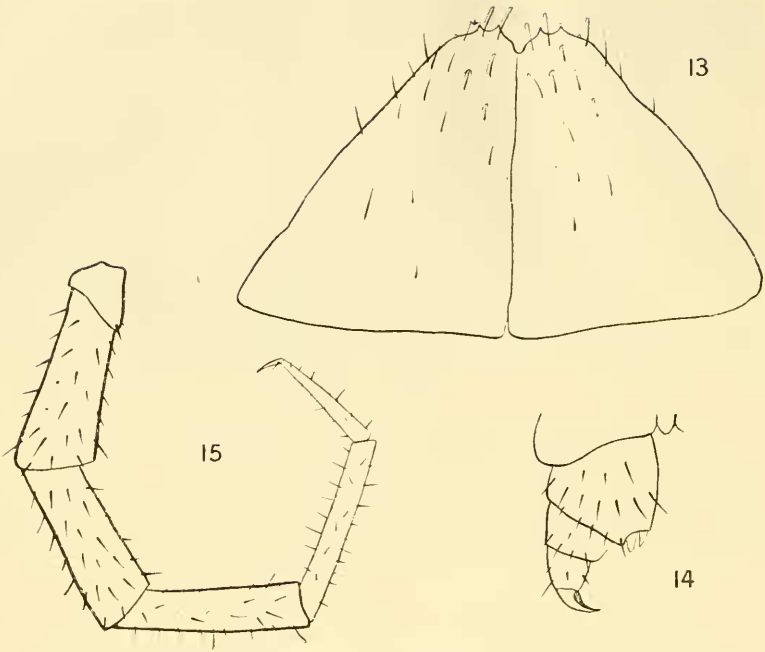


FIG. 13.—Prosternum.      FIG. 14.—Gonopod of ♀.      FIG. 15.—15th leg.

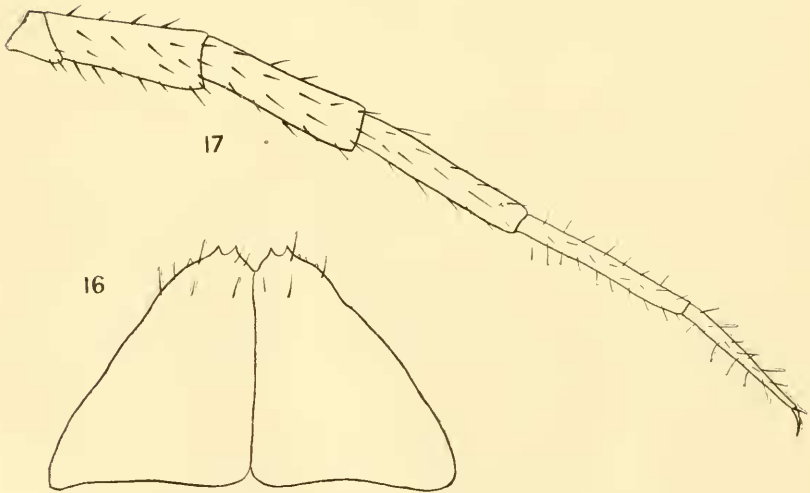


FIG. 16.—Prosternum.      FIG. 17.—15th leg.



Coxal pores small, 3, 3, 3, 2, or 2, 3, 3, 3. Gonopods of ♀ (fig. 14) with inner basal spurs sharp, and slightly shorter than the outer, which are blunt; terminal claw curved and sharp. First tarsal joint of 15th leg (fig. 15) 7.1 times as long as wide: femur 1.7 times as wide as tibia. Tibial spur on legs 1 to 12. Tergites with a slight posterior emargination on 3rd and 5th segments, otherwise as in *L. emarginatus*.

Length 10 mm.

Loc.—Chatham Islands (Miss S. D. Shand).

4. *Lamyctes kermadecensis* sp. n. (Figs. 16 and 17.)

Colour (in spirit) dark brown.

Antennae broken. Prosternum (fig. 16) 1.72 times as wide as long, very sparsely hairy; teeth 1.2 + 2.3 (the usual arrangement, with the addition of two very small teeth on the right side). Coxal pores large, 3, 3, 3, 3. Gonopods of ♀ as in *L. chathamensis*. First tarsal joint of 15th leg (fig. 17) 9 times as long as wide; femur 1.77 times as wide as tibia. Tergites as in *L. emarginatus*.

Length 10 mm.

Loc.—Sunday Island (Kermadec Group).

GENUS *WAILAMYCTES* NOV.

Fifteen leg-bearing segments. Head with or without eyes. Labrum (fig. 18) unidentate, the lateral pieces provided with a fringe of hairs.

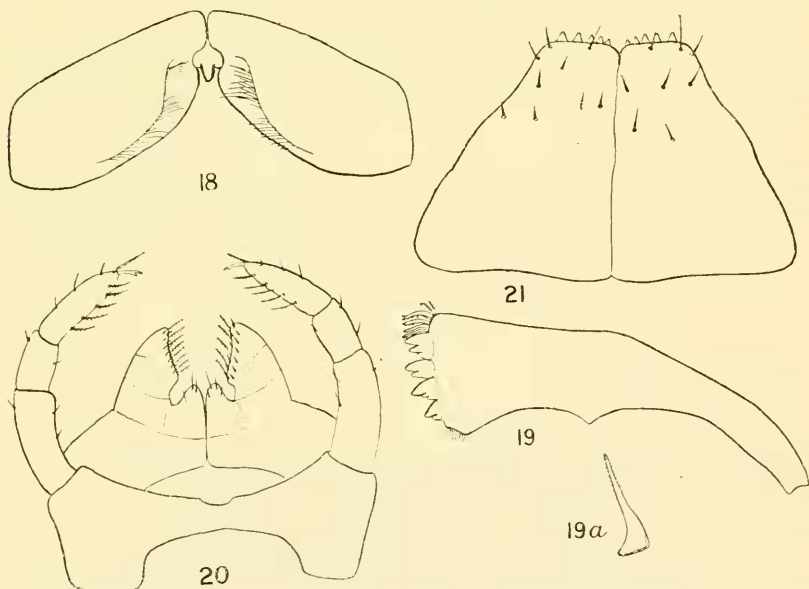


FIG. 18.—Labrum.

FIG. 19.—Mandible.

FIG. 19a.—Plumose process on mandible.

FIG. 20.—First pair of maxillae and labial palp.

FIG. 21.—Prosternum.

Mandible (figs. 19 and 19a) with four complex teeth, a set of plumose processes above them, and a fringe of smaller simple hairs. First pair

of maxillae (fig. 20): inner ramus small, with a few simple hairs; outer ramus provided on the inner edge with a row of plumose hairs, and with numerous simple hairs elsewhere. Labial palp 3-jointed, terminal segment with plumose hairs on the inner side, terminal claw complex. Prothorax (fig. 21) produced forward, narrowing slightly, with straight dental edges, separated by a median sulcus and armed with from 4 + 4 to 6 + 6 even-sized teeth. Tergal plates with angles distinctly rounded and posterior margins straight, except in the posterior segments, where there is a slight emargination. Spiracles as in *Lamyctes*. First to 12th pairs of legs with tarsi entire, 13th to 15th pairs with tarsi biarticulate. Tibial spur present 1st to 13th legs. Coxal pores on the last four pairs of legs.

Type: *Wailamyctes trailli* sp. n.

KEY TO THE SPECIES.

Eyes absent .. .. .	1. <i>W. trailli</i> sp. n.
Eyes present .. .. .	2. <i>W. halli</i> sp. n.

The two species given in the key are in all respects, except in the presence and absence of eyes, so much alike that I have no hesitation in assigning them to the same genus. Both differ from *Lamyctinus* Silvestri (*Boll. Lab. Zool., R. Scuola Superiore d'Agric., Portici*, vol. 4, p. 38, 1909) in the presence of tibial spurs on the 13th leg, and in the form of the prothorax, which in *Lamyctinus* is of the usual form found in *Lamyctes*.

1. *Wailamyctes trailli* sp. n. (Figs. 18 to 24.)

Colour (in spirit) light yellowish-brown.

Head (fig. 24) without eyes. Antennae with 21 joints. Prothorax (fig. 21) 1.45 times wider than long, dental edges straight, teeth 4 + 4 to 6 + 6. Coxal pores 2, 2, 2, 2. Gonopods of ♀ (fig. 22) with basal spurs and

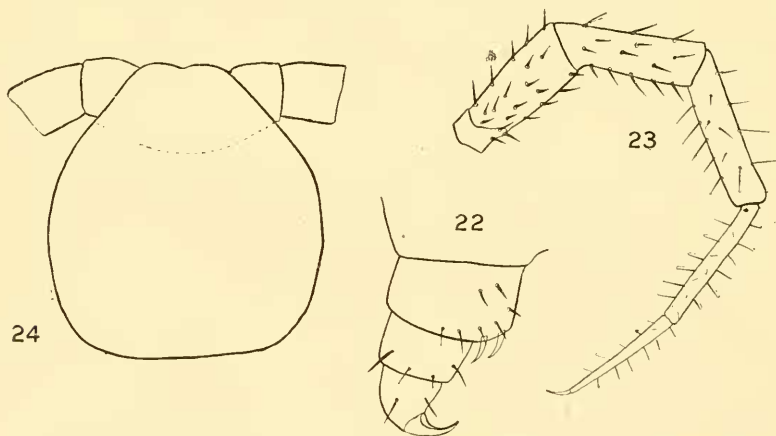


FIG. 22.—Gonopods of ♀.

FIG. 23.—15th leg.

FIG. 24.—Head.

claws sharp and curved. First tarsal joint of 15th leg (fig. 23) 8.8 times longer than wide; femur 1.68 times as wide as tibia. Tibial spurs on legs 1 to 13.

Length 9 mm.

Loc.—Stewart Island (Walter Traill) and Waipara (G. Brittin).

2. *Wailamyctes halli* sp. n. (Figs. 25 to 27.)

Colour (in spirit) brown.

Head (fig. 25) with a pair of eyes. Antennae with 19 joints. Prosternum (fig. 26) 1.72 times as wide as long, teeth 4 + 4. Coxal pores

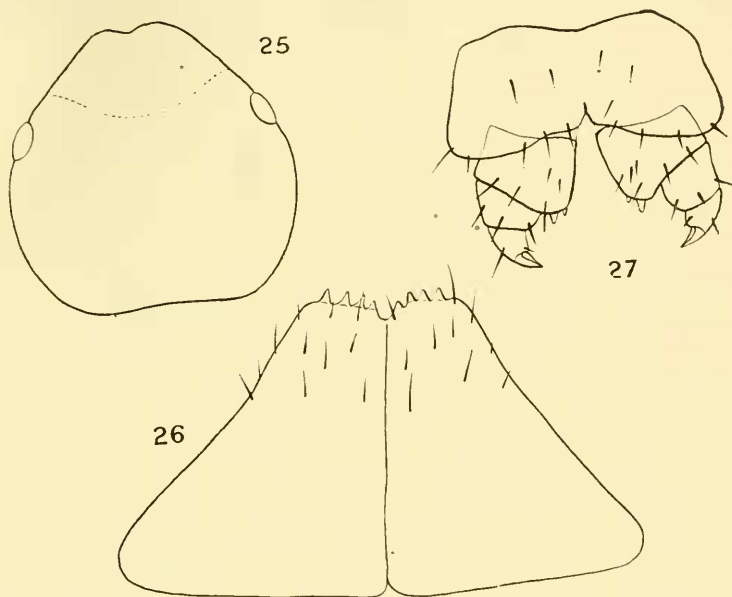


FIG. 25.—Head.

FIG. 26.—Prosternum.

FIG. 27.—Gonopods of ♀.

2, 2, 2, 2. Gonopods of ♀ (fig. 27) with basal spurs and claw blunt and straight. Tibial spurs on legs 1 to 13. 15th pair of legs unknown.

Length 8 mm.

Loc.—Mount Algidus, Rakaia Gorge (T. Hall).

Genus *PARALAMYCTES* Pocock, 1901.

*Paralamyctes* Pocock, *Ann. Mag. Nat. Hist.*, 7th ser., vol. 8, p. 450 (1901). Verhoeff, *Bronn's Klass. und Ord. Tierreichs*, Myriapoda, p. 238 (1907).

Fifteen pedigerous segments, with tergites either simply rounded behind, or with produced posterior angles on some segments. Spiracles on segments 1, 3, 5, 8, 10, 12, 14. A pair of eyes on the head (fig. 28). Antennal segments 19 to 43. Labrum (figs. 32 and 32a) unidentate, with a fringe of plumose hairs on the lateral pieces. Teeth on prosternum even-sized, 2 + 2 to 10 + 10. Mandible (fig. 29) with complex cutting-teeth, lacinate processes, and a row of plumose hairs on the inner side. First pair of maxillae (fig. 30) with plumose hairs on the outer ramus, and simple hairs on the inner. Labial palp (fig. 31) with plumose and simple hairs. All the tarsi biarticulate. Tibial spur on legs 1 to 13. Coxal pores on the last 4 pairs of legs. Gonopods 3-jointed.

Type: *P. spenceri* Pocock.

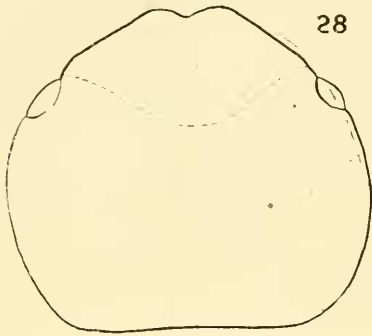
KEY TO NEW ZEALAND SPECIES.

- |   |    |                             |
|---|----|-----------------------------|
| a. Larger, prosternum with 10 + 10 teeth  | .. | 1. <i>P. validus</i> sp. n. |
| b. Smaller, prosternum with 5 + 5 teeth.. | .. | 2. <i>P. dubius</i> sp. n.  |

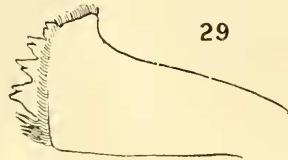
1. *Paralamyctes validus* sp. n. (Figs. 28 to 35.)

Colour (in spirit) dull brown, with richer brown edging to the tergites.

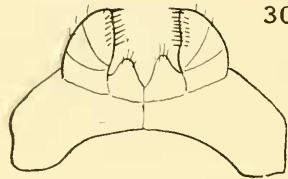
Antennae with 25 to 28 joints, the distal joints long and narrow. A pair of eyes present on the head (fig. 28). Prosternum (fig. 33) with broad dental edges, armed with 8 + 8 main teeth, with two or three smaller teeth



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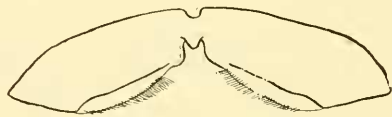
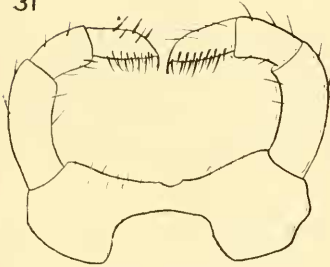


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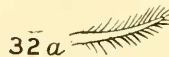


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31



32



32a

FIG. 28.—Head.

FIG. 29.—Mandible.

FIG. 30.—First pair of maxillae.

FIG. 31.—Labial palp.

FIG. 32.—Labrum.

FIG. 32a.—Plumose hair of labrum.

interposed between the main teeth, making 10 + 10 or 11 + 11 in all. Gonopods of ♀ (fig. 34) with strong blunt basal spurs, and moderately sharp terminal claw. Tibial spur on legs 1 to 13. Fifteenth pair of legs (fig. 35) with 1st tarsal joint 7 times as long as broad; femur 1.9 times as wide as tibia. Coxal pores 4, 4, 4, 5.

Length 15 mm.

Loc.—Ohikaka (W. R. Gray); Ohakune (J. B. Mayne).

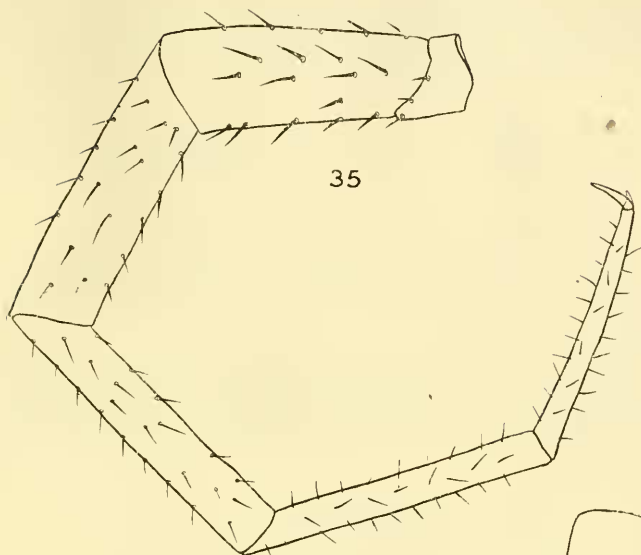
2. *Paralamyctes dubius* sp. n. (Fig. 36.)

Colour (in spirit) brown.

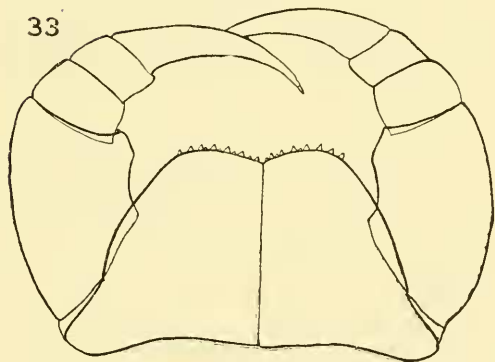
Antennae broken. A single pair of eyes on the head. Prosternum (fig. 36) very broad, shortly truncated anteriorly, dental edges not separated but forming a straight line; teeth 5 + 5. Coxal pores 2, 2, 2, 2. Tarsi of legs 1 to 11 biarticulated, other legs unknown. Tibial spur on legs 1 to 11, others unknown.

Loc.—Rhodes's Bush, Port Hills (G. A.).

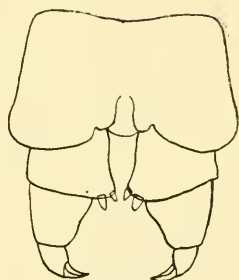
I have described this species from a single mutilated specimen, but the distinctive character of the prosternum is sufficient to distinguish it from the other species.



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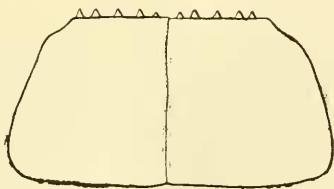


34

FIG. 33.—Prosternum.

FIG. 34.—Gonopods of ♀.

FIG. 35.—15th leg.



36

FIG. 36.—Prosternum.

## Genus HAASEILLA Pocock, 1901.

*Henicops* Haase, *Abh. Zool. Mus. Dresden*, No. 5, p. 36, pl. 3, fig. 41 (1887). *Haaseilla* Pocock, *Ann. Mag. Nat. Hist.*, 7th ser., vol. 8, p. 449 (1901). Verhoeff, *Bronn's Klass. und Ord. Tierreichs*, Myriapoda, p. 237 (1907).

Coxal teeth 5 + 5. Coxal pores reduced to one on each side. Fifteenth pair of legs much shorter than 14th, and without protarsal segment.

1. *Haaseilla insularis* (Haase), 1887.

*Henicops insularis* Haase, *Abh. Zool. Mus. Dresden*, No. 5, p. 36, pl. 3, fig. 41 (1887). *Haaseilla insularis* Pocock, *Ann. Mag. Nat. Hist.*, 7th ser., vol. 8, p. 449 (1901).

*Loc.*—Auckland.

As I have not had access to Haase's original paper, and have not seen any specimens of this species, I cannot add anything further to the above description of the genus.

## Family ANOPSOBIIDAE.

## Genus ANOPSOBIUS Silvestri, 1899.

*Anopsobius* Silvestri, *Rev. Chilena Hist. Nat.*, v, 3, p. 143 (1889); id. (descr. emend.), *Rendiconti della R. Accademia dei Lincei*, vol. 18, ser. 5, 1st sem., fasc. 6, p. 750 (1909). Attems, *Die Fauna Subwest-Australiens*, Myriapoda, p. 154 (1911).

Body similar to the *Henicopipræ* in appearance, and with the same number of segments. Spiracles on segments 3, 5, 8, 10, 12, and 14. Eyes absent. Antennae moniliform. Labrum (fig. 37) free, with median sulcus. unidentate. Mandible (fig. 38) with toothed blade, provided with small lacinate processes. First pair of maxillae (fig. 39) triarticulate, with plumose and simple hairs on the outer rami, and with simple hairs only on the inner rami. Toxicognaths with coxae much produced, dental edges straight and inclined inwards. Tibial spur on legs 1 to 12. Tarsi of the 1st to 12th legs unarticulate, of the 13th to 15th biarticulate. Coxal pores (fig. 40) on the last two pairs of legs. Coxae of the last pair of legs (fig. 40) and, to a less extent, of the penultimate pair, produced infero-posteriorly into an acute tooth.

1. *Anopsobius neozelanicus* Silvestri, 1909. (Figs. 37 to 46.)

*Anopsobius neozelanicus* Silvestri, *Contrib. conosc. Chilop.*, iii, Descri. di alcuni generi e specie di Henicopidae, Portici, p. 45 (1909).

Colour pale yellowish-brown.

Antennae (fig. 42) with 15 joints, provided with numerous bristles. Prosternum (fig. 41) with 5 + 5 teeth, dental edges inclined inwards. Coxal pores 2, 2. Gonopods of ♀ (fig. 43) with two stout basal spurs, and strong sharp curved terminal claw. First pair of maxillae (fig. 39) with simple hairs on the inner rami, and with simple and plumose hairs on the outer. Last pair of legs (figs. 44 and 44a) with a small inferior spine on the 2nd joint,

and a large sharp inferior spine situated anteriorly on the 3rd joint. Penultimate legs with a sharp spine (smaller than on the last pair) on the 3rd joint. Terminal claw of the last pair with a small hair, and one accessory claw, the other legs (fig. 45) with a simple hair and two accessory claws.

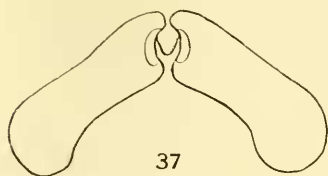


FIG. 37.—Labrum.

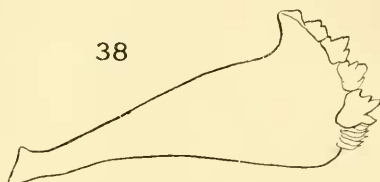


FIG. 38.—Mandible.

*Loc.*—Ben Lomond, Mount Algidus, the Remarkables, and Otarama (T. Hall); Waipara (G. Brittin); Cass, and Port Hills, Christchurch (G. A.); and "Wellington et Hokianga (W. W. Smith)" (Silvestri).

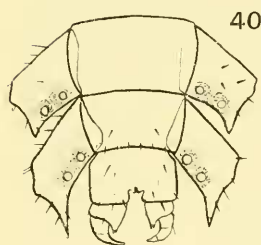


FIG. 40.—Last two body segments.

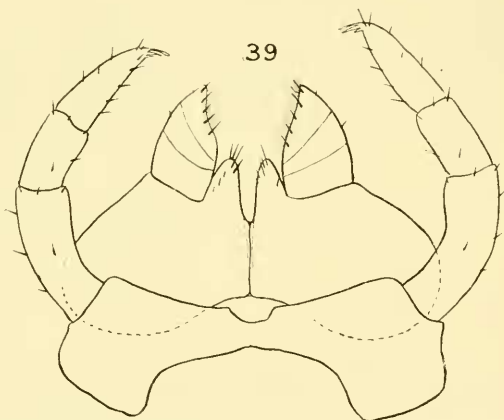


FIG. 39.—First pair of maxillae, and labial palp.

A few collecting notes may perhaps be added here. *Henicops maculatus* was found only under stones on a hillside, and not in the bush. It runs with amazing speed, so much so that it was usually necessary to obtain the assistance of a friend, who would turn the stone over while the collector concentrated his attention upon the swiftly disappearing centipede. This recalls the remark of Hutton upon the speed of *H. impressus*. The species of *Lamycetes* were generally found under the stones or logs in the bush, although the specimens of *L. emarginatus* all came from my garden at Riccarton, and were found under any board which had been left lying on the ground for a week or two. These centipedes made use of a subterfuge in attempting to escape. They would rush under the nearest leaf or piece of bark, with all the appearance of intending to go as deep as possible; but instead of doing this they curled up at once under the leaf, and one's



hurried digging usually gave them a good chance of escape, until the trick was discovered. *Anopsobius neozelanicus* is much smaller than the other centipedes, and moves comparatively slowly. It was found only at the

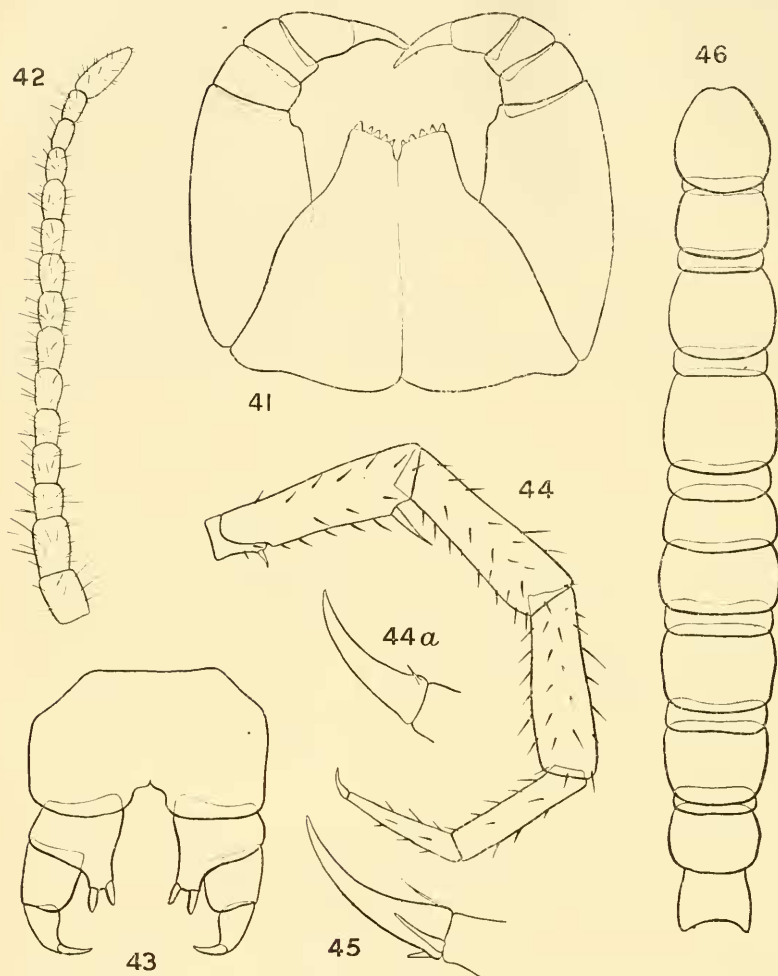


FIG. 41.—Prosternum.

FIG. 42.—Antennae.

FIG. 43.—Gonopods of ♀.

FIG. 44.—15th leg.

FIG. 44a.—Terminal claw of 15th leg.

FIG. 45.—Terminal claw of 14th leg.

FIG. 46.—Dorsal view of body.

edge of the bush, never far in, and never outside altogether. Its habit when disturbed varies: sometimes it will feign death, and at other times it will run about wildly in every direction in its attempts to escape